

### Remarks

Claims 7-11 and 13-24 are pending in this application. The Examiner rejected claims 7-11 and 13-24 under 35 U.S.C. § 112, ¶ 2 on the grounds that claims 7, 10 and 23 were indefinite. The Examiner also rejected claims 7, 9, 10, 13, 15, 16, 18, 21 and 23-24 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,114,788 to Vuillemin et al. in view of U.S. Patent No. 5,625,239 to Persson et al. and U.S. Patent No. 5,325,006 to Uno et al. The Examiner rejected claim 8 under 35 U.S.C. § 103(a) as obvious over Vuillemin, Persson and Uno further in view of U.S. Patent No. 5,490,319 to Nakamura et al. The Examiner rejected claims 11, 19 and 20 under 35 U.S.C. § 103(a) over Vuillemin in view of Persson, Uno and further in view of U.S. Patent No. 5,334,899 to Skybyk. The Examiner rejected claims 14, 17 and 22 over Vuillemin, Persson and Uno in view of the ordinary skill in the art. The Examiner also objected to the drawings.

With respect to the drawings, the Examiner has three objections. First, the Examiner objects that the limitation of a “solvent” must be shown in the drawings because it is mentioned in claim 8. Applicants respectfully submit that the reference in claim 8 to “solvents” describes the overall environment in which the invention is used and is not a feature of the motor claimed in the application. Moreover, because the “solvents” refer to the environment, it is impractical, if not impossible, to diagrammatically depict such solvents without completely obliterating the remainder of the drawings. Applicants submit that one with ordinary skill in the art would, in view of the specification, understand the solvent reference in claim 8 without being depicted in the drawings. Second, the Examiner objected to the drawings on the grounds that they fail to disclose “magnetic bearings.” There is no limitation in the claims for “magnetic bearings.” The

Examiner has misread the limitation “rotor bearing permanent magnets” as requiring “magnetic bearings.” It should be clear that “bearing” as used in the claims takes its ordinary definition of “to be equipped or furnished with.” WEBSTER’S NINTH NEW COLLEGIATE DICTIONARY 137 (9<sup>th</sup> ed. 1991). Applicants have amended the claims to make this more clear. Finally, the Examiner objects to the drawings on the grounds that the connecting leads are not clearly pointed out in the drawings, or alternatively, that the leads and terminal contacts appear to be the same component. Applicants respond that the connecting leads are disclosed in the drawings as reference numeral 11. In addition, the terminal contacts 9, are diagrammatically depicted by a “+” as terminals 9 of the connecting leads. One with ordinary skill in the art would recognize this designation. Thus, Applicants respectfully submit that the Examiner’s objections to the drawings have been adequately addressed and that the same be withdrawn.

Applicants have also overcome the Examiner’s rejections under 35 U.S.C. § 112, ¶ 2, or in the alternative, such rejections are improper and should be withdrawn. With respect to claim 7, the language has been amended to replace the term “bearing” with its ordinary meaning. It should be clear to one with ordinary skill in the art that “magnet bearings” is not a limitation of the claims. In addition, Claim 10 was earlier amended to remove the “pulse wire” language via Applicants’ November 19, 2002 Amendment, which was entered in connection with Applicants’ RCE of January 6, 2003. Thus, the Examiner’s rejection based on the “pulse wire” language is not proper and should be withdrawn. Finally, the Examiner rejected claim 23 on the grounds that the sensors do not appear from the drawings to be between the coils. Applicants respectfully direct the Examiner’s attention to Figures 1 and 2, which depict sensors 6 between the coils 5.

Accordingly, Applicants respectfully submit that the Examiner's rejections under 35 U.S.C. § 112, ¶ 2 have been overcome or should be withdrawn.

Claims 7 and 15 have been amended to recite that Applicants' invention is directed to an electric motor that can operate in the presence of solvents because the sensors comprising connecting leads are solvent resistant. No disclosure, teaching, motivation or suggestion for this apparatus is present in any of the cited art.

In particular, the Examiner concedes that the combination of Vuillemin, Persson and Uno fails to disclose a motor operating in the presence of solvents, and by extension therefore, makes no mention of solvent resistant sensors, as required by claims 7 and 15. The Examiner relies on Nakamura for that teaching. However, Nakamura combined with the art of record fails to render those claims obvious.

Obviousness requires that each and every element of a claim be present in a combination of references, along with a teaching, motivation and suggestion of success in combining them. *See* MPEP § 2143.01. A modification to a reference that changes that reference's principle of operation is not obvious. *See id.* Furthermore, a modification to a reference that renders the reference unsatisfactory for its intended purpose is not obvious. *See id.* The motivation to combine reference must be "clearly and particularly" taught in the references. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Finally, in determining obviousness, the Examiner "cannot rely on conclusory statements when dealing with particular combinations of prior art and specific

claims, but must set forth the rationale on which it relies.” *In re Sang Su Lee*, 277 F.3d 1338 (Fed. Cir. 2002).

Nakamura cannot be combined with Vuillemin, Persson and Uno to render claims 7 and 15 obvious for two reasons. First, Nakamura is non-analogous art. Second, even if analogous, Nakamura fails to disclose key limitations of the invention.

It is well-settled that, “[i]n order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be *in the field of applicant’s endeavor* or, if not, then be *reasonably pertinent to the particular problem with which the invention is concerned*.” *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992); MPEP § 2141.01(a). Here, there can be no dispute that Nakamura is in a completely different field of endeavor than the present application. Nakamura states that its field is related to a specific chemical composition, in particular “a thermotropic liquid crystal polymer composition” that acts as an electric insulator. (Nakamura, “Field of the Invention,” col. 1, l. 10-15). Conversely, the present invention relates to “an electronically controlled electric motor intended for use in an environment with solvents.” (Specification, “Field of the Invention,” p. 1, l. 6-8). Thus, Nakamura is related to the *chemical* arts; the present invention is related to the *mechanical* arts.

In addition, Nakamura has no pertinence to the particular problem solved by the present invention. A reference is pertinent if “it is one in which, because of the manner with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.” *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992); MPEP § 2141.01(a). Here, the

problem is the fact that prior art motors included sensors and connecting leads that were attacked by solvents. The present invention utilizes *solvent resistant* sensors so that the motor can be economically used in an environment containing solvents (such as fuel). Nakamura, which relates to the chemical arts, is focused on providing an electrical insulator, particularly a liquid crystal polymer, that is capable of injection molding. An inventor, looking to improve the functionality of an electric motor, would not look to a reference disclosing new chemical compositions of a liquid crystal insulator. *See id.* (finding chemical art non-analogous to mechanical art). Accordingly, Applicants respectfully submit that the Examiner has improperly relied on Nakamura as a reference, and the rejections of at least claims 7 and 8 should be withdrawn.

Even if analogous, Nakamura fails to disclose the claimed invention. While it is true that Nakamura discloses a motor that may be used in the presence of a fluid, no mention in Nakamura is made of whether such fluid is a solvent. More importantly, Nakamura fails to teach use of solvent resistant sensors. Nakamura, to the extent it discloses anything related to the present invention, discloses merely using some kind of insulator to house electrical components. This method has been found to be insufficient to solve the problem solved by the present invention, as Applicants make clear in the specification. (*See* Specification, p. 1, l. 12-35) (plastic sheathings insufficient). Accordingly, no teaching, motivation or suggestion of success is present in Nakamura. Applicants respectfully submit, therefore, that claims 7 and 15 are patentable.

Because claims 7 and 15 are patentable, claims 8-11, 13-14 and 16-24 are patentable as dependant from patentable base claims. *See* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).


Applicant respectfully submits that the amendment herein demonstrates Applicant's preference for particular language and, notwithstanding anything to the contrary, are not intended to be amendments related to patentability. Furthermore, Applicant respectfully submits that the amendments herein merely add language of equivalent scope, and that nothing herein is intended to narrow the scope of any of the claims.

The Commissioner is hereby authorized to charge any additional fees (or credit any overpayment) associated with this communication to our Deposit Account No. 13-0019. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such extension is requested and such fee should also be charged to our Deposit Account.

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Dated: July 16, 2003

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Daniel H. Shulman', written over a horizontal line.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	)	Group Art Unit:
Kuehnel, et al.	)	2834
	)	Examiner:
Serial No.: 09/719,594	)	Gonzalez, J.
	)	
Filing Date: March 9, 2001	)	
	)	
For: <b>ELECTRONICALLY</b>	)	
<b>CONTROLLED ELECTRIC</b>	)	
<b>MOTOR INTENDED FOR USE</b>	)	
<b>IN AN ENVIRONMENT WITH</b>	)	
<b>SOLVENTS</b>	)	

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**REVISIONS TO CLAIMS 7 AND 15**

7. (Thrice Amended) An electronically controlled electric motor comprising:

a shaft;

at least one rotor [bearing] having permanent magnets thereon for rotation about the shaft;

a stator housing having coils; and

motor position sensors arranged in the stator housing, wherein at least one position sensor comprises [an] a solvent resistant electrical conductor produced integrally with connecting leads; and

wherein a current is induced in the electrical conductor by a moving magnetic field.

15. (Amended) An electric motor for use in an environment containing solvents comprising:

a stationary stator housing;

a shaft through the stator housing;

a rotor positioned inside the stator housing for rotation about the shaft, wherein the rotor contains one or more permanent magnets thereon;

one or more electrical coils fixed in the stator housing; and

one or more position sensors fixed in the stator housing, wherein the position sensors comprise solvent resistant electrical conductors integral with connecting leads, and wherein current is induced in the electrical conductors by a moving magnetic field.